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वस्त्रादि — कपास करघों के लिए निचला  
शाफ्ट — विशिष्टि  
( दूसरा पुनरीक्षण )

Textiles — Bottom Shaft for Cotton  
Looms — Specification  
( Second Revision )

ICS 59.120.30

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## FOREWORD

This Indian Standard (Second Revision) was adopted by the Bureau of Indian Standards, after the draft finalized by the Textile Machinery and Accessories Sectional Committee had been approved by the Textiles Division Council.

Picking motion is originated from the bottom shaft. Two picking cams are mounted on the bottom shaft, one on each side therefore one revolution of bottom shaft ensures the insertion of two picks. Timing of picking is changed by turning the cam on the bottom shaft.

This standard was originally published in 1963 and subsequently revised in 1978. This revision has been made in the light of experience gained since its publication and to incorporate the following major changes:

- a) Title of the standard has been modified;
- b) Marking, packing and sampling clauses have been modified; and
- c) References to Indian standards have been updated.

The composition of the Committee responsible for the formulation of this standard is listed in Annex D.

For the purpose of deciding whether a particular requirement of this standard is complied with the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS 2 : 2022 'Rules for rounding off numerical values (*second revision*)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

*Indian Standard***TEXTILES — BOTTOM SHAFT FOR COTTON LOOMS —  
SPECIFICATION***( Second Revision )***1 SCOPE**

This standard prescribes the requirements for bottom shaft for plain and automatic cotton looms.

**2 REFERENCES**

The standards listed in Annex A contain provisions which, through reference in this text, constitute provisions of this standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent editions of these standards.

**3 TERMINOLOGY**

For the purpose of this standard reed space (of the loom) shall mean maximum space available on the loom for the insertion of a reed, that is, the overall width of a reed which can be fixed on the loom.

**4 MANUFACTURE****4.1 Material**

Bottom shaft shall be manufactured from bright bar conforming to IS 7283.

**4.2 Workmanship and Finish**

The shaft shall be straight and free from rust. The diameter of the shaft should be uniform throughout without any hammer marks. Both ends of the shaft shall be chamfered.

**4.3 Shape**

The shaft shall generally be as shown in Fig. 1.

NOTE — Extra machining, such as keyways and step diameters shall be done according to special design requirements.

**5 REQUIREMENTS****5.1 Dimensions**

The length of bottom shaft shall be within coarse class deviations for linear dimensions specified in IS 2102 (Part 1) and reproduced in Annex B for ready reference. The diameter of the shaft shall have a fit of H8 according to IS 919 (Part 1).

**5.2 True Running**

The bottom shaft shall run true. However, when tested by the method given in Annex C the out of true running, if present, shall not exceed 0.025 mm.

**5.3 Screw Threads**

Bottom shaft shall preferably be provided with screw threads conforming to IS 4218 (Part 4) and at one of its ends over a length of 50 mm (*see* Fig. 1).

**6 MARKING**

**6.1** Each component shall be marked with the following information:

- Manufacturer's name, initials or trade-mark, if any;
- Reed space of the loom on which the bottom shafts are to be used;
- Number of bottom shafts;
- Diameter of bottom shafts;
- Gross and net mass;
- Lot/batch number;
- Country of origin; and
- Any other information required by the law in force and/or by the buyer.

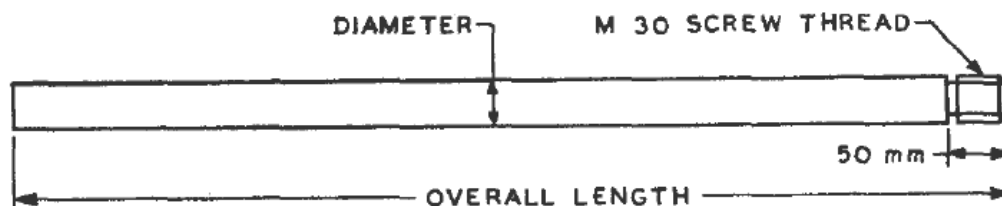


FIG. 1 BOTTOM SHAFT

## 6.2 BIS Certification Marking

The product(s) conforming to the requirements of this standard may be certified as per the conformity assessment schemes under the provisions of the *Bureau of Indian Standards Act, 2016* and the Rules and Regulations framed thereunder, and the products may be marked with the Standard Mark.

## 7 PACKING

The bottom shafts shall be coated lightly with anti-

rust agent and shall be packed in a wooden case provided with supports so that they do not touch each other. The wooden case shall be strong enough to withstand the hazards of transit.

## 8 SAMPLING

Unless otherwise agreed to between the buyer and the seller, to ascertain the conformity of bottom shaft to the requirements of this specification, or as specified in IS 2500 (Part 1) shall be followed.

## ANNEX A

(Clause 2)

### LIST OF REFERRED STANDARDS

<i>IS No.</i>	<i>Title</i>	<i>IS No.</i>	<i>Title</i>
IS 919 (Part 1) : 2014	Geometrical product specifications (GPS) — ISO code system for tolerances on linear sizes: Part 1 Basis of tolerance, deviation and fits ( <i>third revision</i> )		indexed by acceptance quality limit (AQL) for lot by lot inspection ( <i>third revision</i> )
IS 2102 (Part 1) : 1993	General tolerances: Part 1 Tolerances for linear and angular dimensions without individual tolerance indications ( <i>third revision</i> )	IS 4218 (Part 4) : 2001	ISO general purpose metric screw threads: Part 4 Selected sizes for screws, bolts and nuts ( <i>second revision</i> )
IS 2500 (Part 1) : 2000	Sampling procedures for inspection by attributes: Part 1 Sampling schemes	IS 7283 : 1992	Hot-Rolled bars for the production of bright bars and machined parts for engineering applications specification ( <i>first revision</i> )

## ANNEX B

(Clause 5.1)

### LENGTH OF BOTTOM SHAFT

Extract from IS 2102 (Part 1)

<i>Sl No.</i>	<i>Range of Nominal Dimensions</i>	<i>Tolerance</i>
	(mm)	(mm)
(1)	(2)	(3)
i)	Greater than 3 and less than equal to 6	± 0.2
ii)	Greater than 6 and less than equal to 30	± 0.5
iii)	Greater than 30 and less than equal to 120	± 0.8
iv)	Greater than 120 and less than equal to 315	± 1.2
v)	Greater than 315 and less than equal to 1 000	± 2
vi)	Greater than 1 000 and less than equal to 2 000	± 3
vii)	Greater than 2 000 and less than equal to 4 000	± 4
viii)	Greater than 4 000 and less than equal to 8 000	± 5

**ANNEX C***(Clause 5.2)***METHOD FOR CHECKING TRUE RUNNING**

**C-1** A surface plate, two 'V' blocks and a micrometer dial gauge shall be used for the purpose of this test.

**C-2** Set the 'V' blocks on the surface plate. Take a bottom shaft and mount it in the 'V' blocks. Set the micrometer dial gauge in such a way that its anvil head is held in contact with the surface of the bottom shaft. Adjust its pointer at zero position. Rotate the shaft once. Observe the maximum deflection of the

pointer of the micrometer dial gauge on both sides of the zero position. Add the two maximum values and divide the sum by two.

**C-3** Repeat the test at 4 more places along the length of the bottom shaft.

**C-4** Report the bottom shaft to be in conformity with the requirements of **5.2**.

**ANNEX D**  
(Foreword)

**COMMITTEE COMPOSITION**

Textile Machinery and Accessories Sectional Committee, TXD 14

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*Member Secretary*

SHRI SWAPNIL  
SCIENTIST 'B'/ASSISTANT DIRECTOR  
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### Amendments Issued Since Publication

Amend No.	Date of Issue	Text Affected

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